

nutrient medium (agar) in the lower part of the apparatus. For this purpose they employed the segmented tubes. At the lower end of the first tube, the substance might diffuse into the surrounding medium; but they assume that the concentration of the toxic substance would be greater in the succeeding tube than in the surrounding medium. This however would not be the case. From the lower end of the first segmented tube as a radius, the substance would diffuse *radially uniformly in all directions* and the concentration in the second tube would be equal to that in the general body of the medium; this state would be altered only *after the roots had commenced to develop in the second tube*. Hence at the time when the roots commenced to grow outside of the general alignment of the tubes, there could be no difference in the concentration of the toxic substance to account for the lateral development.

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PROCEEDINGS OF THE CLUB

OCTOBER 8, 1907

The first autumn meeting for the year 1907 was held at the American Museum of Natural History. The meeting was called to order at 8:30 by the secretary, and Dr. E. B. Southwick was elected chairman. Eleven persons were present.

The minutes for the preceding meeting, on May 29, 1907, were read and approved, and the name of Dr. Forrest Shreve was presented for membership. The resignation of Miss Edith B. Brainerd was read. On motion the secretary cast the vote of the club electing Dr. Shreve to membership.

The announced program consisted of informal reports upon the summer's work and observations. In response to calls by the chairman the following members made remarks:

C. Stuart Gager: Remarks on the absence of undergrowth in a hemlock forest.

Hemlock seeds germinate freely under the parent trees, but seldom attain a height of more than three or four inches. It

was suggested that there may be present in the soil a substance or substances secreted by the hemlock roots and deleterious to the germination and growth of hemlock seedlings. This, as well as poor insolation, must be considered in attempting to explain why the seedlings fail to develop.

M. A. Howe : Botanical observations made in Pownal, Vt.

Dr. Howe reported his attendance at the annual summer field meeting of the Vermont Botanical Club, which was held in Pownal, the extreme southwestern township of Vermont. In this town are the only known Vermont stations for *Liriodendron Tulipifera*, *Morus rubra*, *Aster sagittifolius*, and several other species of interest.

C. B. Robinson : Plant studies on the northern coast of the Gulf of St. Lawrence.

Dr. Robinson had spent the first two or three weeks of August at Seven Islands, on the northern coast of the Gulf of St. Lawrence, about 325 miles below the city of Quebec. The coast to the east of the bay of Seven Islands is a nearly level sandy plain, but the western side, and the islands across the mouth, are formed of steep crystalline rock, a kind of feldspar. A range of hills attaining 1,700 feet in height runs parallel with the coast about ten miles inland. With the exception of a few plants like *Sibbaldiopsis tridentata*, *Empetrum nigrum*, and *Achillea Millefolium*, the rocks and the sand bore strikingly different floras. There was a tendency in some cases for the species of the woods to invade the sand, bringing there species like *Linnaca americana*, *Moneses uniflora*, and *Peranium ophioides*. Three species of *Botrychium* grew in still more open places on the sand. The flora, at best a scanty one, is particularly poor in trees. The shores are lined by black spruce, and the white spruce is less common. Beginning a short distance from the shore the sand plain becomes a pine barren, with *Pinus Banksiana* as practically the only tree. Two species of paper birch, the fir, larch, aspen, and mountain maple are the only other real trees. It had been hoped that the higher latitude would sufficiently compensate for altitudes lower than those of the hills of Gaspé, and thus give a flora comparable to that of the latter. A few such species

were found, among them *Diapensia lapponica*, *Vaccinium ovalifolium*, *V. uliginosum*, *Comandra livida*, *Euphrasia Randii*, and *Selaginella rupestris*, but the general results in this respect were distinctly disappointing.

W. D. Hoyt: Experiences at the Biological Laboratory of the U. S. Bureau of Fisheries, at Beaufort, N. C.

An account was given of the excellent equipment of the station, and the facilities for research. The richness of the local fauna and the varied flora were noted. The locality abounds in epiphytic plants of numerous species. The speaker's investigations indicate a local algal flora that compares favorably with that of the New England and the Florida coasts. Over 100 species have been found. The latitude of Beaufort appears to be the northern limit of certain southern species and the southern limit of some northern ones. The predominant flora varies greatly, according to the season, southern forms predominating in summer and northern forms in winter.

About 23 miles off the coast and under a depth of 13-14 fathoms, extending about one mile in length and one-half a mile in width, is probably the most northern of the coral reefs. It supports a rich algal flora, consisting almost entirely of southern forms, some of them new to North America.

Miss Pauline Kauffmann: Remarks on the unusual habitats of certain ferns in New Jersey.

Several species have been observed growing in habitats somewhat unusual for the species.

Homer D. House: Observations in western South Carolina, and on the Isle of Palms.

On the Isle of Palms, which is off the coast of South Carolina, several species new to South Carolina, and a probably new species of *Helianthus*, were found.

Tracy E. Hazen: Account of a visit to the experimental garden of President Brainerd, at Middlebury, Vt.

A description was given of President Brainerd's experimental pedigreed cultures of violets. In addition to the remarks concerning the Mendelian studies in *Viola*, attention was called to the fact that, contrary to the general notion, viable seeds were commonly found in the petaliferous flowers of the violet.

Discussion followed the remarks of each speaker.
The Club adjourned at 9:45.

C. STUART GAGER,
Secretary.

NEWS ITEMS

Dr. John Hendley Barnhart has been appointed librarian of the New York Botanical Garden, succeeding Miss Anna Murray Vail, who has felt obliged to give up the position on account of ill health.

Dr. Raymond H. Pond, who has been studying during the past year at the New York Botanical Garden, sailed for Europe on November 7 with the intention of spending several months in visiting German botanical laboratories.

Dr. William A. Merrill, first assistant of the staff of the New York Botanical Garden, visited the Biltmore Forest School, at Biltmore, North Carolina, in October, where he secured collections of Polyporaceae and made some observations on diseases of trees.

In the series of non-technical lectures at Columbia University, descriptive of the achievements of science and modern scholarship, recently inaugurated for the academic year 1907-08, the science of botany will be represented by Professor Herbert M. Richards, whose lecture will be given at 4:10 P. M., December 4, at Havemeyer Hall.

The botanical exploration of the Bahama Islands by the New York Botanical Garden and the Field Museum of Natural History is being continued by an expedition which left New York on November 15. The party, consisting of Dr. Marshall A. Howe and Mr. Percy Wilson, expects to visit some of the southeastern islands of the archipelago.

Dr. Ezra Brainerd, who is well known to botanists by reason of his notable studies of the species of *Viola* and by his additions to the knowledge of the flora of Vermont, has resigned the presidency of Middlebury College, to take effect at the end of the present academic year, when he will have completed forty-four years of service as an officer of that institution, during twenty-three years of which he will have been its president.